

### Remarks

In response to the Office Action mailed September 11, 2006, the present application has been carefully reviewed. Reconsideration of the application is respectfully requested.

Claims 1-27 are pending in the application, with Claims 1, 7 and 23-27 being the independent claims.

### Rejection under 35 USC § 103(a)

Claims 1-5, 7-11, 13-15, 19, 20, and 23-27 are rejected under 35 USC § 103(a) as being unpatentable over US Patent 5,736,473 (Cohen) in view of US Patent 6,562,192 (Hamilton). [Paper 20060901, page 2]

Independent Claim 1 is directed to a liquid water absorbing mixture comprising a wax containing a superabsorbent and a channeling agent. The wax would ordinarily prevent water vapor from contacting the superabsorbent. However, as claimed, the wax comprises a channeling agent which allows liquid water through. The absorbent mixture will, therefore, expand to multiple times its original volume upon exposure to water, but will not expand when exposed to water vapor.

The Examiner asserts that:

Cohen discloses sheet or web materials that incorporate particulate materials. The structure comprises fibrous materials such as textile fibers and super-absorbent materials. The particulate material can include microcrystalline cellulose. Sodium polyacrylate particulates were added to the matrix. Waxes are also included in the matrix.

The Examiner then acknowledges that Cohen does not teach that the wax contains the superabsorbent. The Examiner relies on Hamilton for showing that "including a wax coating on such fibers or "nits" improved the particle to particle

interaction of such materials.” The Examiner therefore, concludes that “as such to have provided the Cohen web with a coating of wax would have been obvious to a person having ordinary skill in the art as a means of ensuring that the material would have enhanced processing functions.” Applicant submits, however, that all of the claim limitations are not suggested by the proposed combination, and further, there is no suggestion or motivation to make the proposed combination.

**ALL CLAIM LIMITATIONS ARE NOT SUGGESTED**

The claimed invention requires a liquid water absorbing mixture comprising a wax containing a superabsorbent and a channeling agent. Respectfully, Cohen in view of Hamilton does not teach or suggest using a wax containing a superabsorbent and a channeling agent.

Cohen is directed to a method of securing particulates to the surfaces of fibrous sheets and/or webs (e.g., medical fabrics and personal care products) using non-transient bonding. (Column 1, lines 18–20, and 56– 61). More specifically, Cohen discloses that a secondary material such as a particulate and/or a superabsorbent can be mixed with a fibrous matrix and fixedly secured thereto, to impart desired characteristics to the fibrous matrix. (Column 1, lines 34–36 and Column 5, lines 27–30). One desired characteristic sought by Cohen is to obtain a substantially uniform distribution of particulates on surfaces of the fibrous matrix. (Column 3, lines 55–59).

The Examiner has acknowledged that Cohen does not teach that the wax contains the superabsorbent, but suggests that Hamilton remedies this deficiency. Applicant respectfully submits that Hamilton does nothing to remedy this deficiency.

Hamilton teaches among other things that "nits," or free-flowing particulate entangled fibers, can be treated with a wax or other types of particle conditioners to modify fiber-fiber interactions during dispersing and/or to modify particle-particle interactions once incorporated into an absorbent article. (Column 21, lines 39-46). The modified interactions prevent bonding or clumping between nits, reduce the size of the nits formed, and enhance the lubricity of the nits relative to one another. (Column 22, lines 1-7 and 16-19).

Hamilton never discloses nor suggests that these "nits" treated with wax are made from superabsorbent materials. Hamilton defines "nits" as "particulate material comprising entangled fibers," not as superabsorbent materials. (Column 6, lines 26-27). In fact, in Hamilton, nits and superabsorbent materials are always referred to as separate materials. For example, in describing an intake and rewet test, Hamilton discloses "afterwards, 2.0 grams of dry nits are spread over the superabsorbent particles such that the depth of the nits over the 20-gsm SMS layer is substantially uniform in the hole of the underlying plate." (Column 9, lines 57-61). Thus, since the Hamilton nits are not made of superabsorbent materials, Hamilton does not suggest the claim limitation of a wax containing a superabsorbent.

Additionally, Cohen in view of Hamilton does not suggest a wax containing a channeling agent. For one, Cohen discloses that the particulates (which may be microcrystalline cellulose) are contained in the fibrous matrix, not within a wax. (Cohen, Column 3, lines 55-59). In fact, if the particulates were within the wax, the wax would substantially affect the characteristics of the particulates and Cohen expressly prohibits this as discussed below.

The Examiner asserts that "[t]he particulate material can include microcrystalline cellulose." However, Cohen never discloses or suggests that these particulates can be

channeling agents. Cohen merely states that the particulates "impart some desired characteristics to sheets or webs." (Cohen, Column 1, lines 34–36). Merely disclosing microcrystalline cellulose as a possible particulate material that imparts some desired characteristic does not suggest that it can be used it as a channeling agent. In fact, microcrystalline cellulose has many other functions including, for example, "an organic colloidal particle binder" (US Patent 7,162, 302), diluents (US Patent 7,161,012), a filler (US Patent 7,161,002), a biodegradable additive (US Patent 7,160,977), and a gelling agent (US Patent 7,157,103). Additionally, the Cohen particulates are secured to the surface of the fibrous matrix, not through the fibrous matrix. (Column 1, lines 56–61). Cohen is, therefore, not enabling for a channeling agent since securing particulates to the surface of a fibrous matrix would not allow liquid water to be **channeled through** the fibrous matrix.

Hamilton does not cure these defects. Hamilton discloses that a wax can be used as a debonder or lubricant prior to or during the preparation of nits. (Hamilton, Column 21, lines 61–65). As discussed above, the Hamilton nits are treated with wax to create free-flowing particulate entangled fibers. (Column 6, lines 26–27 and Column 21, lines 39–46). There is nothing in Hamilton that suggests adding a channeling agent such as microcrystalline cellulose to the wax.

Thus, Cohen in view of Hamilton does not teach or suggest the claim limitation of a wax containing a channeling agent.

**THERE IS NO SUGGESTION OR MOTIVATION TO MAKE THE PROPOSED MODIFICATION**

- A. The proposed modification would render the Cohen invention unsatisfactory for its intended purpose:

Applicant respectfully submits that there is no suggestion or motivation to make the modification proposed by the Examiner. As stated by the Federal Circuit:

If [a] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Modifying Cohen to include wax coated particulates would render the Cohen invention inoperable for its intended purpose because the wax, as described in Hamilton, would prevent bonding of the Cohen particulates to the fibrous matrix. (Hamilton, Column 22, lines 16–19). More specifically, Cohen discloses that a uniform distribution of particulates can be secured to individually exposed surfaces of sheets and/or webs by non-transient bonding. (Cohen, Column 1, 56–61). Non-transient bonding means permanently securing particulates to a surface. Hamilton describes wax as a debonder. (Hamilton, Column 23, lines 4–14). As Hamilton expressly states “debonders on the surface of a fibrous nit can prevent bonding or clumping between nits and can enhance the lubricity of the nits relative to one another” (emphasis added). (Hamilton, Column 22, lines 17–19). Thus, if the particulates in Cohen were coated with a debonder such as wax, they could not be permanently secured to the fibrous material. Clearly, the proposed modification would render the Cohen invention inoperable for its intended purpose because the wax, described by Hamilton as a debonder, would prevent the Cohen particulates from being permanently secured to the fibrous matrix.

**B. The References Do Not Suggest the Desirability of the Claimed Invention:**

Not only would the suggested combination be inoperable, but there is no motivation to combine the references. As stated by the Federal Circuit:

There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. *In re*

*Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457–58 (Fed. Cir. 1998).

The teachings in Cohen and Hamilton provide no motivation to combine the references, and the Examiner has not pointed to any other references that suggest such combination.

More specifically, the Examiner asserts that in Cohen, “waxes are also included in the matrix.” However, Applicant respectfully submits that Cohen suggests that waxes be included in the matrix, only if they do not significantly affect the characteristics of the matrix. However, in the definition of “thermoplastic material,” Cohen merely states that waxes are natural substances that behave similarly to thermoplastic material. (Column 3, line 4–10). This statement does not suggest including wax in a fibrous matrix or for a fibrous matrix made from wax.

Moreover, in the definition of “consisting essentially of,” Cohen states:

As used herein, the term “consisting essentially of” does not exclude the presence of additional materials *which do not significantly affect the desired characteristics* of a given composition or product. Exemplary materials of this sort would include, without limitation, pigments, antioxidants, stabilizers, surfactants, *waxes*, flow promoters, particulates or materials added to enhance processability of a composition (*emphasis added*). (Column 3, line 45–52).

Since Cohen suggests that wax be added only if the wax would not substantially affect the characteristics of the product, Cohen actually teaches away from coating the Cohen particulates and/or superabsorbents with wax for the purpose of substantially affecting the product. A person having ordinary skill in the art would not modify the Cohen invention to include a wax coating on the particulates and/or superabsorbents because Cohen teaches that the wax must not have a substantial effect on the

characteristics. Therefore, Cohen in view of Hamilton quite clearly does not motivate the combination, and in fact, teaches away from a wax containing a superabsorbent.

**C. The Examiner's Conclusion of Obviousness is based on Improper Hindsight Reasoning:**

Applicant respectfully submits that the Examiner's proposed combination is "hindsight" because "express" motivation to combine the references is lacking.

More specifically, the Examiner's assertion that Cohen and Hamilton can be combined is contradicted by the express language of Cohen. Cohen expressly states that wax can be present only if it would not significantly affect the characteristics of the product. (Column 3, line 45-52). A person having ordinary skill in the art would not modify the Cohen invention to include a wax coating on the particulates for the purpose of changing their properties or characteristics if Cohen teaches that the wax must not have a substantial effect on the product. In fact, as described in Hamilton, a wax coating on the Cohen particulates would substantially affect the characteristics of the product because wax is a lubricant or debonder, and Cohen expressly prohibits this. The Examiner has therefore suggested a modification to Cohen that is inconsistent with the teachings and objective of Cohen to fixedly secure particulates to a fibrous matrix.

For the above reasons, Applicant submits that Claims 1, 7, and 23-27 are not *prima facie* obvious. Applicant respectfully submits the asserted rejection of Claims 1, 7 and 23-27 has been overcome.

**Dependent Claims 2-5, 8-11, 13-15, 19 and 20**

As Claims 2-5 and 15 depend from independent Claim 1 and include all the limitations thereof, and Claims 8-11, 13, 14, 19 and 20 depend from independent

Claim 7 and include all the limitations thereof, these claims are also believed to be in condition for allowance as discussed above.

Further, Claim 13 requires a porous string member. The Examiner asserts that "[i]t should be noted that Cohen's fibers are being equated to Applicant's string material." Cohen, however, does not teach or suggest that the Cohen fibers are porous string material. On the contrary, Cohen describes the fibers as tending to be hydrophobic. (Cohen, Column 1, lines 26-27). Hydrophobic, according to the Compact Oxford English Dictionary, means "tending to repel or fail to mix with water." Porous, on the other hand, is defined in the Compact Oxford English Dictionary as "having minute spaces through which liquid or air may pass." Clearly, a fibrous matrix that repels liquid cannot be equated to a porous string which allows liquid to pass through. Thus, Applicant submits that all the claim limitations in Claim 13 are not taught or suggested by Cohen.

#### Rejection under 35 USC § 112

Claims 24, 26, and 27 are rejected under 35 USC § 112, first paragraph, because the specification is not enabling for the broad genus of "liquid water absorbing compound" of Claims 24 and 26 or "water absorbing means for absorbing liquid water" and "means for encapsulating said water absorbing means" of Claim 27. Specifically, the Examiner asserts that "the specification does not enable any person skilled in the art to practice the invention commensurate in scope with these claims."

To determine whether the specification meets the enablement requirement, the test used is whether undue or unreasonable experimentation is needed to practice the invention. See *In Re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) and MPEP § 2164.01.



#### Claims 24 and 26

The basis for the "liquid water absorbing compound" of Claims 24 and 26 can be found on page 2 of the specification, in the first sentence of the Detailed Description of the Invention which states "the improved absorbent mixture of the present invention includes a superabsorbent which expands to multiple times its original volume when exposed to liquid water. . ." Furthermore, in the last paragraph on page 3 of the specification and the first paragraph on page 4, it specifically states that "[t]he preferred superabsorbent of the composition can either be sodium polyacrylate or potassium polyacrylate . . . [a]lso, other highly absorbent compounds, such as cellulose, starches, alginates and gums may form a part of the mixture instead of the above superabsorbents. The highly absorbent powders may be used in the same proportions as the superabsorbents." Further, page 6 in the second to last paragraph of the Detailed Description describes "[i]n the above description sodium and potassium polyacrylates have been given as examples of superabsorbents. However, it will be appreciated that a superabsorbent within the contemplation of the present invention is any compound which will expand greatly when exposed to water in both a vapor and liquid state." It is therefore submitted that it would not require undue experimentation in order to produce a suitable liquid water absorbing compound.

#### Claim 27

Claim 27 presents the mixture described in the specification in a "means plus function" format. The basis for the language of Claim 27, "water absorbing means for absorbing liquid water" can be found on pages 3 and 4 of the Detailed Description. The last paragraph on page 3 and continuing onto page 4 states "[t]he preferred superabsorbent of the composition can either be sodium polyacrylate or potassium polyacrylate. . . [a]lso, other highly absorbent compounds, such as cellulose, starches,

alginates and gums may form a part of the mixture instead of the above superabsorbents. The highly absorbent powders may be used in the same proportions as the superabsorbents." It is submitted that the specification is in fact enabling for a "water absorbing means for absorbing liquid water" because many different types of liquid water absorbing means can be used and therefore, one having ordinary skill in the art can make and use the claimed invention without undue experimentation.

The basis for the language "means for encapsulating said water absorbing means" of Claim 27 can be found in the first full paragraph on page 4 which specifically states that ". . .any other suitable type of wax may be used which will encapsulate the superabsorbent and protect it from absorbing aqueous vapor. The other waxes which may be used include animal waxes, vegetable waxes, and synthetic type waxes." It is submitted that the specification is in fact enabling for a "means for encapsulating said water absorbing means" because many different types of waxes can be used to encapsulate the superabsorbent, and therefore, one having ordinary skill in the art can make and use the claimed invention without undue experimentation.

In sum, Applicant submits that the specification does enable a person having ordinary skill in the art to practice the invention commensurate in scope with Claims 24, 26 and 27. It is respectfully requested that the rejection of Claims 24, 26 and 27 under 35 USC § 112 be withdrawn. In this respect, it is submitted that the specification is enabling for the broad genus of "liquid water absorbing compound" of Claims 24 and 26 and "water absorbing means for absorbing liquid water" and "means for encapsulating said water absorbing means" of Claim 27.

### Nonstatutory Double Patenting Rejection


Applicant notes the nonstatutory obviousness-type double patenting rejection and has submitted a terminal disclaimer. Applicant respectfully requests allowance of Claims 6, 12, 16-18, 21 and 22 as no further rejections remain for these claims.

### Conclusion

Each of the matters in the Office Action having been addressed, reconsideration and favorable action are requested.

Dated: January 11, 2007

Respectfully submitted,



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